1118-68-270 **Alan Jaehyun Kim*** (`alankim117@gmail.com`), Choice Research Group, 32 Piermont Rd., Cresskill, NJ 07626, and **Richard Kyung** (`nycrick@gmail.com`), Choice Research Group, 32 Piermont Rd., Cresskill, NJ 07626. *Study of the new LPFs to enhance the process of the biomedical imaging.*

By using coils to give stimuli to the hydrogen atoms in the human body, the MRI scanner collects data in a matrix called the K-Space. However, because the K-space is composed of digital numbers that cannot be visualized by the human brain, a computer must use a transform to convert the data into a final image. However, LPFs inevitably create trade-offs. Because the amount of matrix data varies directly with image resolution and with computational speed, image resolution varies inversely with computational speed. It is thus evident that we need to use LPFs to match the purpose. For relatively simple scans, for instance, those of the bone exterior, MRI scanners would use LPFs that have lower resolutions but faster computation. In contrast for extremely detailed scans, like scans of the brain structure, MRI scanners would need LPFs that have higher resolutions but slower computation. The objective of this lab is to determine the optimal low-pass filters for different levels of required accuracies. In particular, this paper suggests sinusoidal functions as LPFs for scans to improve accuracy and quality of the resolution, since impulse functions for scans show that relatively lower accuracy in image resolution. (Received February 03, 2016)